

TC-W190/W300

SERVICE MANUAL

US Model

TC-W190

US Model

Canadian Model

AEP Model

UK Model

TC-W300



Photo : TC-W300

SPECIFICATIONS

Recording system 4-track 2-channel stereo

Fast-forward and rewind time

Approx. 90 sec. (with C-60 cassette)

Bias AC bias

Signal-to-noise ratio (NAB, at peak level)

Cassette	Dolby NR switch	OFF	B-TYPE ON	C-TYPE ON (TC-W300)
TYPE IV (Sony METAL-ES)		58 dB	65 dB	71 dB
TYPE II (Sony UX-S)		56 dB	63 dB	69 dB
TYPE I (Sony HF-S)		54 dB	61 dB	67 dB

Total harmonic distortion

1.0% (with Sony METAL-ES cassettes)

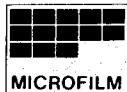
Frequency response (DOLBY NR OFF)

TYPE IV cassette (Sony METAL-ES)	30–15,000 Hz (± 3 dB, DIN) 30–13,000 Hz (0VU recording)
TYPE II cassette (Sony UX-S)	30–14,000 Hz (± 3 dB, DIN)
TYPE I cassette (Sony HF-S)	30–13,000 Hz (± 3 dB, DIN)

Wow and flutter 0.12% WRMS (NAB)
 $\pm 0.2\%$ (DIN)

Inputs

Line inputs (phono jacks)	Sensitivity	77.5 mV (-20 dB)
	Input impedance	50 k ohms



Outputs

Line outputs (phono jacks)	Rated output level	0.44 V (-5 dB) at a load impedance 47 k ohms
	Load impedance	Over 10 k ohms
Headphone output (stereo phone jack)	Output level	0.28 mW at a load impedance of 32 ohms

General

Power requirements

US, Canadian model: 120 V AC, 60 Hz

AEP model: 220 V AC, 50/60 Hz

UK model: 240 V AC, 50/60 Hz

Power consumption

15 W

Dimensions Approx. 430×117.5×250 mm (w/h/d)
(17×4 3/4×9 7/8 inches)

including projecting parts and controls

Weight Approx. 3.4 kg (7 lbs 8 oz)

Supplied accessories

Audio connecting cord (2)

STEREO CASSETTE DECK
SONY®

SAFETY CHECK-OUT

After correcting the original service problem, perform the following safety check before releasing the set to the customer:

Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.

LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2V AC range are suitable. (See Fig. A)

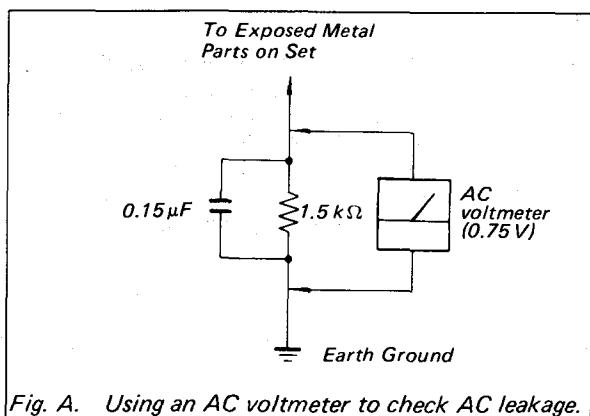


Fig. A. Using an AC voltmeter to check AC leakage.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK OR DOTTED LINE WITH MARK ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

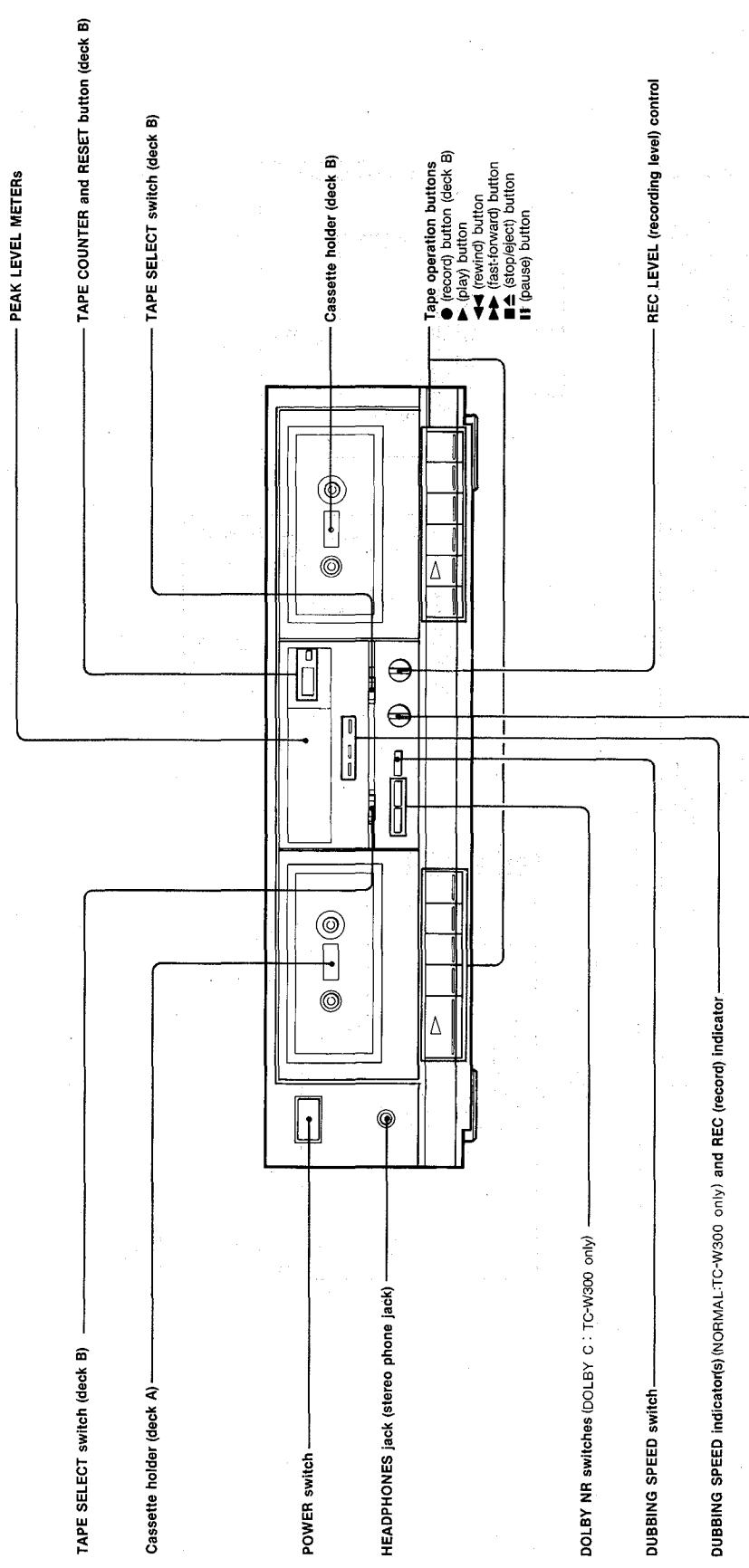
—MODEL IDENTIFICATION—
(Specification Label)
TC-W190:
SONY®
MODEL NO. TC-W190
STEREO CASSETTE DECK
AC120V 60Hz 15W
TC-W300:
SONY®
MODEL NO. TC-W300
STEREO CASSETTE DECK

US, Canadian model: AC120V 60Hz 15W
 AEP model: AC220V~50/60Hz 15W
 UK model: AC240V~50/60Hz 15W

**ATTENTION AU COMPOSANT AYANT RAPPORT
À LA SÉCURITÉ!**

LES COMPOSANTS IDENTIFIÉS PAR UNE MARQUE SUR LES DIAGRAMMES SCHÉMATIQUES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DANS LES SUPPLÉMENTS PUBLIÉS PAR SONY.

1-1. LOCATION AND FUNCTION OF CONTROLS



SECTION 1 GENERAL

PRECAUTION

- Clean the following parts with a denatured-alcohol-moistened swab:

record/playback head	pinch roller
erase head	rubber belts
capstan	idle

SECTION 2 MECHANICAL ADJUSTMENTS

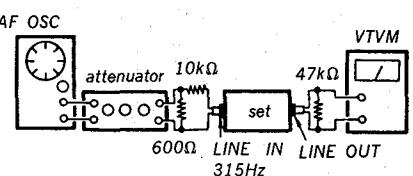
Torque Measurement

Torque	Torquement	Meter reading
FWD	CQ-102C	30-70g·cm (0.42-0.97oz·inch)
FWD Back tension	CQ-102C	1.5-5.5g·cm (0.020-0.076oz·inch)
FF, REW	CQ-201B	63g·cm or more (0.87oz·inch or more)

SECTION 3 ELECTRICAL ADJUSTMENTS

- Demagnetize the record/playback and erase head with a head demagnetizer.
- Do not use a magnetized screwdriver for the adjustments.
- After the adjustments, apply suitable locking compound to the parts adjusted.
- The adjustments should be performed with the rated power supply voltage unless otherwise noted.
- The adjustments should be performed in the order given in this service manual. (As a general rule, playback circuit adjustment should be completed before performing recording circuit adjustment.)
- The adjustments should be performed for both L-CH and R-CH.
- Switches and controls should be set as follows unless otherwise specified.
 - DOLBY NR switch: OFF
 - TAPE select switch: TYPE 1 (NORMAL)
(DECK-B)

Mode: record



Standard Input Level

	LINE IN
source impedance	10kΩ
input level	0.25V (-10dB)

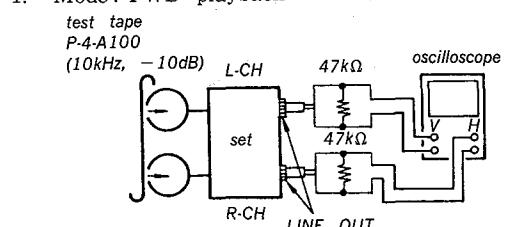
Standard Output Level

	LINE OUT
load impedance	47kΩ
output level	0.44V (-5dB)

3-1. RECORD/PLAYBACK HEAD AZIMUTH ADJUSTMENT DECK A/DECK B

Procedure:

- Mode: FWD playback

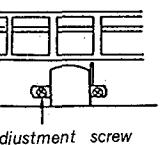


- Connect pin to with the lead wire. (CNP505)

Specification: high speed

Speed checker	Digital frequency counter
0±0.5%	5,980±30Hz

Frequency difference between the beginning and the end of the tape should be within 1.5% (90Hz).

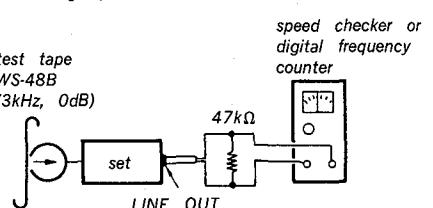


3-2. TAPE SPEED ADJUSTMENT

DECK A/DECK B

Procedure:

Mode: FWD playback



Adjustment location:

DECK-A side RV501
DECK-B side RV503

2. Remove the wire in step 1. (CNP505)

Specification: normal speed

Speed checker	Digital frequency counter
0±0.3%	2,980±10Hz

Frequency difference between the beginning and the end of the tape should be within 1.5% (45Hz).

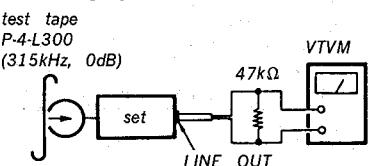
Adjustment location:

DECK-A side RV502
DECK-B side RV504

3. If the specifications are not satisfied, repeat step 1 and 2.

3-3. PLAYBACK LEVEL ADJUSTMENT**DECK A/DECK B****Procedure:**

Mode: FWD playback



Adjust,

DECK-A side RV101 (L-CH), RV201 (R-CH)

DECK-B side RV102 (L-CH), RV202 (R-CH)

so that the specifications are satisfied.

Specification :

LINE OUT level: 0.44V (-5dB)

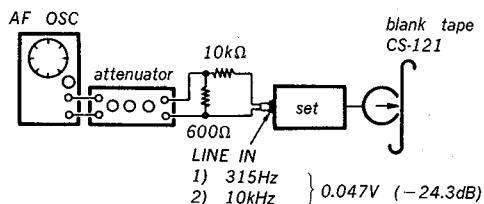
level difference between the channels: within 0.5dB

3-4. RECORD BIAS ADJUSTMENT **DECK B****Setting :**

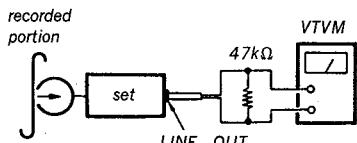
TAPE SELECT: TYPE-I (DECK-B)

Procedure:

1. Mode : record



2. Mode : playback



Playback the tape recorded in step 1. If the specification is not satisfied, adjust CT301 and repeat steps 1 and 2.

Specification :

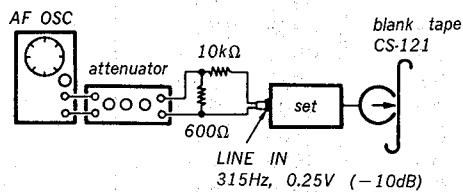
The LINE OUT level of 10kHz signal relative to that of 315Hz: -0.5dB to 0.5dB.

3-5. RECORD GAIN ADJUSTMENT **DECK B****Setting :**

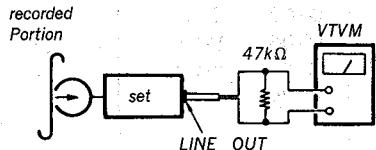
TAPE SELECT: TYPE-I (DECK-B)

Procedure:

1. Mode : record



2. Mode : playback



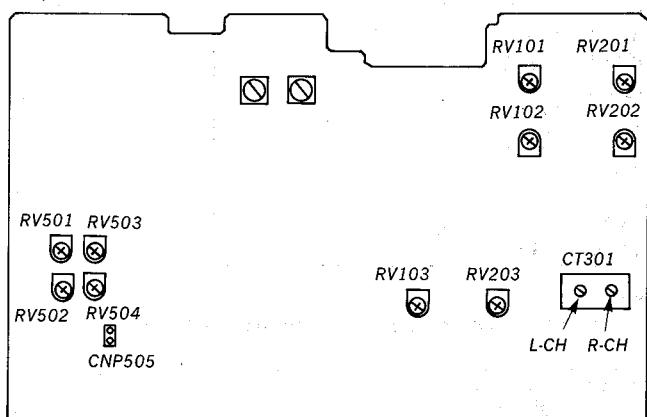
play back the recorded in step 1. If the specification is not satisfied, adjust RV103 (L-CH), RV203 (R-CH) and repeat steps 1 and 2.

Specification:

LINE OUT level: 0.44V (-5dB)

Adjustment Location : Audio Board

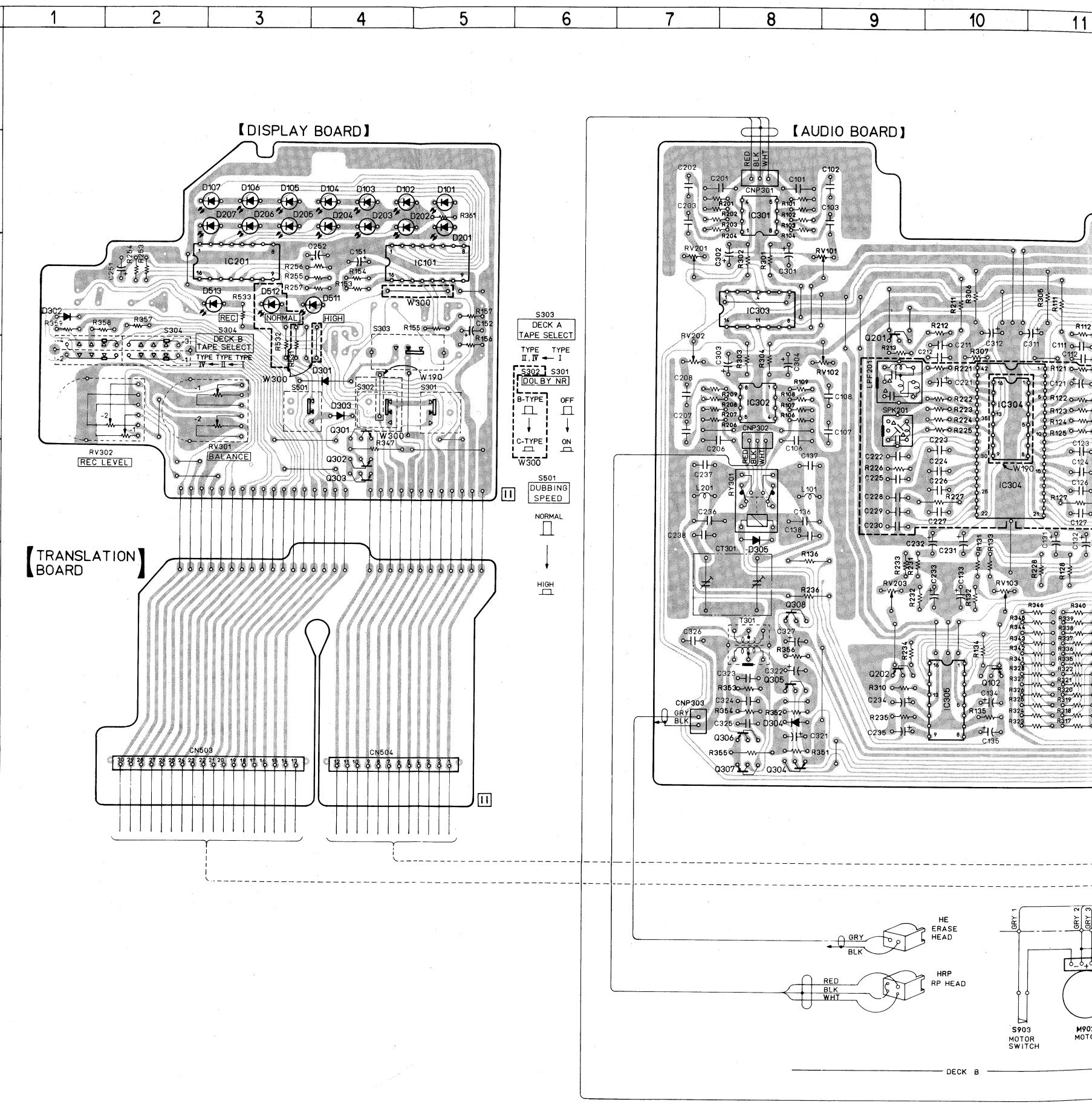
Component side.



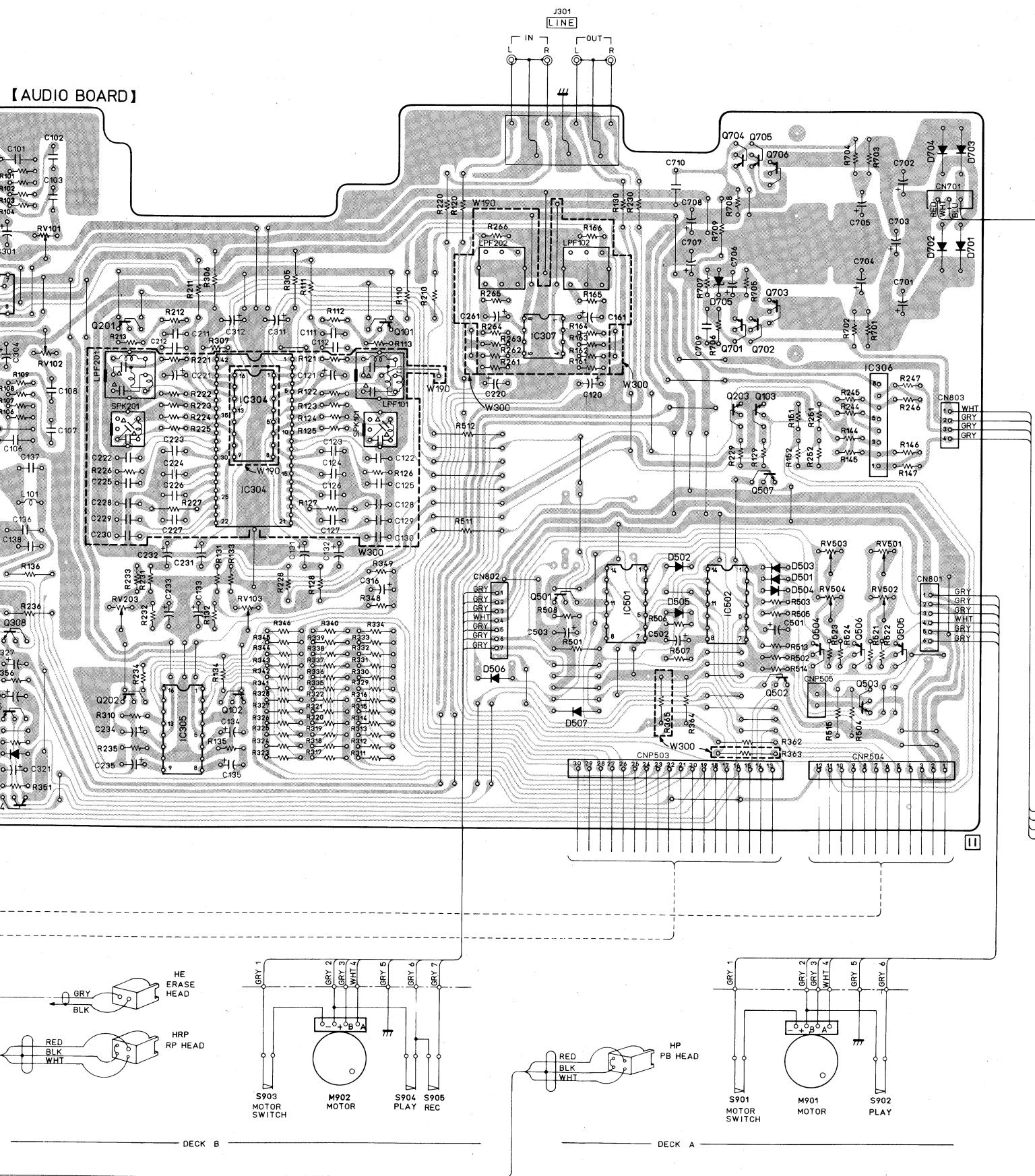
3-1. PRINTED WIRING BOARD

• Semiconductor Location

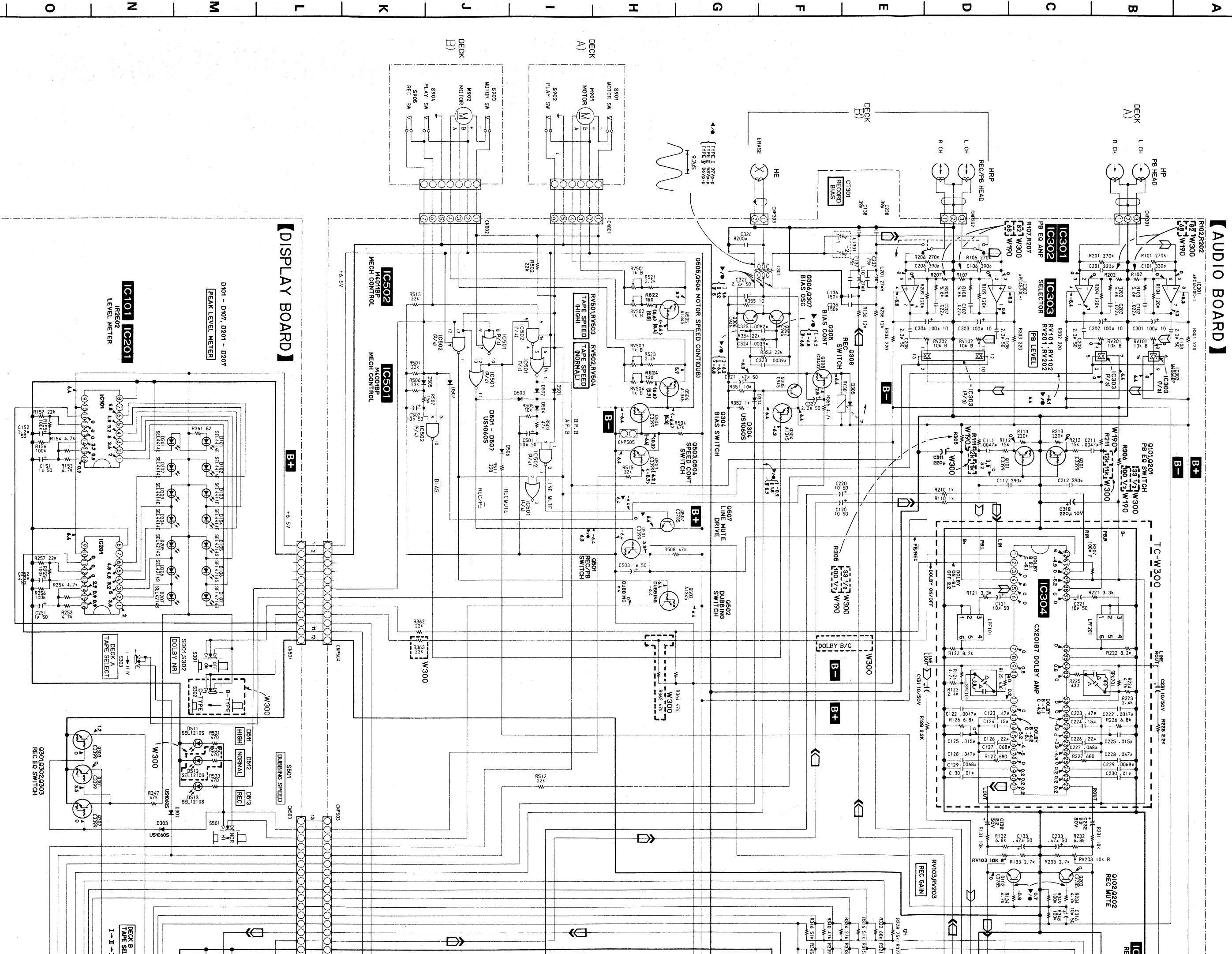
Ref. No.	Location	Ref. No.	Location
D101	B-5	Q103	E-15
D102	B-4	Q201	C-9
D103	B-4	Q202	G-9
D104	B-4	Q203	E-15
D105	B-3	Q301	D-4
D106	B-3	Q302	E-4
D107	B-3	Q303	E-4
D201	B-5	Q304	H-8
D202	B-4	Q305	G-8
D203	B-4	Q306	G-8
D204	B-4	Q307	H-8
D205	B-3	Q308	F-8
D206	B-3	Q501	F-13
D207	B-3	Q502	Q-15
D301	D-4	Q503	G-16
D302	C-1	Q504	F-15
D303	D-4	Q505	F-16
D304	G-8	Q506	F-16
D305	E-8	Q507	E-15
D501	F-15	Q701	C-15
D502	F-11	Q702	C-15
D503	F-15	Q703	C-15
D504	F-15	Q704	B-15
D505	F-14	Q705	B-15
D506	G-12	Q706	B-15
D507	G-13		
D511	C-4		
D512	C-3: (TC-W300)		
D513	C-3		
D701	C-16		
D702	C-16		
D703	B-16		
D704	B-16		
D705	C-14		
IC101	C-5		
IC201	C-3		
IC303	C-8		
IC304	E-10		
IC305	G-10		
IC306	D-16		
IC307	D-13: (TC-W190)		
IC501	F-14		
IC502	F-14		
Q101	C-11		
Q102	G-10		

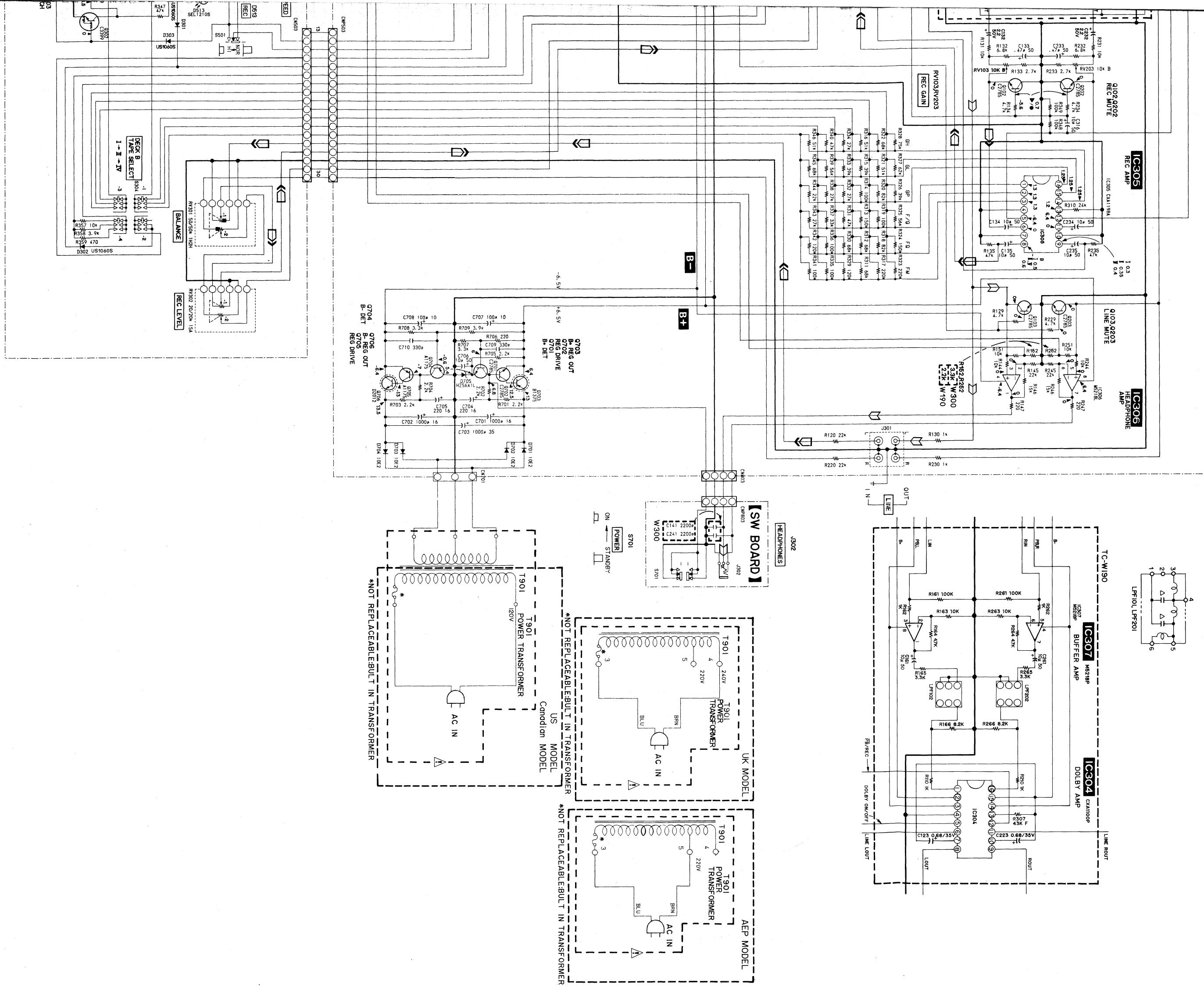
SECTION 4
DIAGRAMS

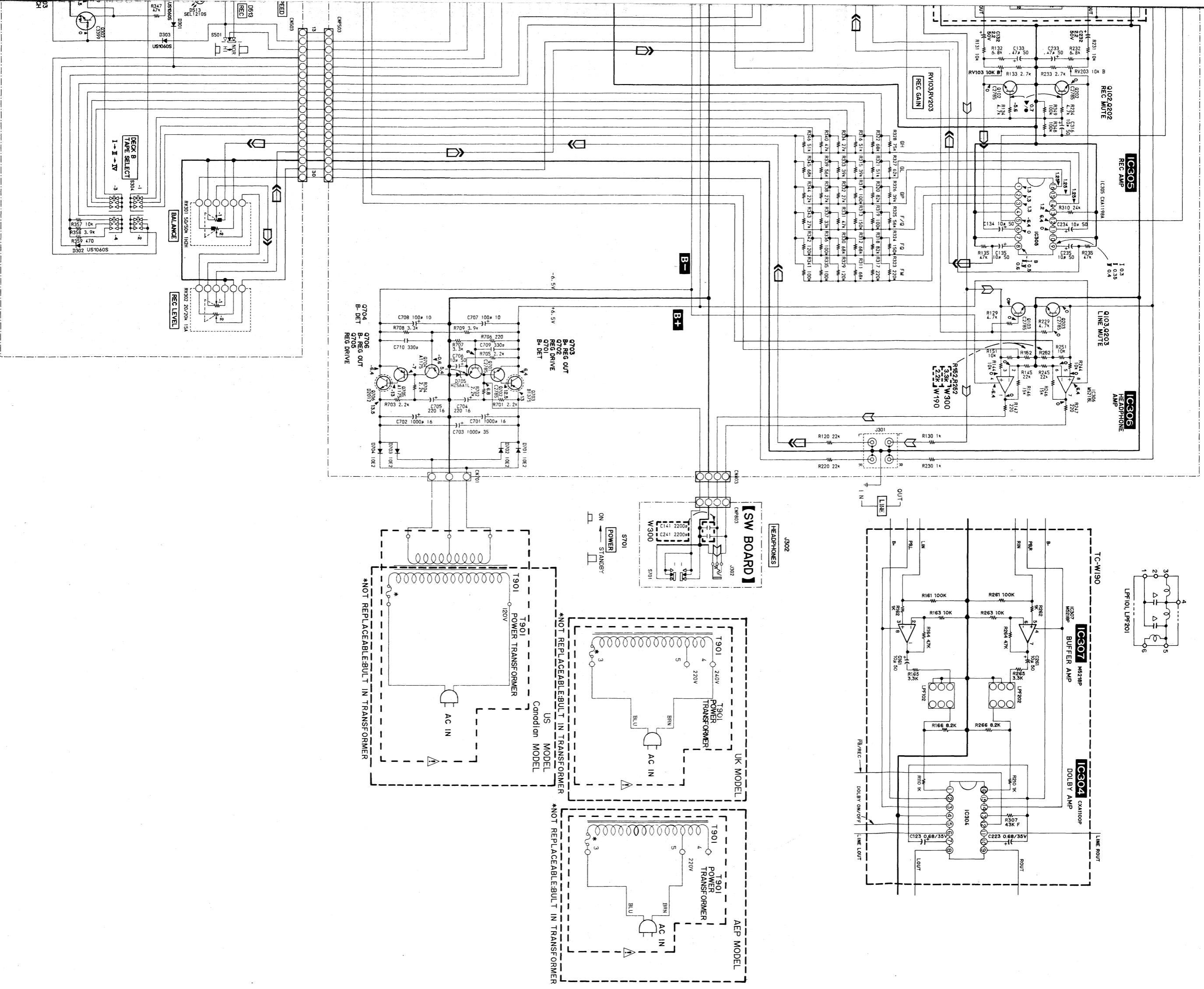
9 10 11 12 13 14 15 16 17 18 19 20 21 22



【AUDIO BOARD】



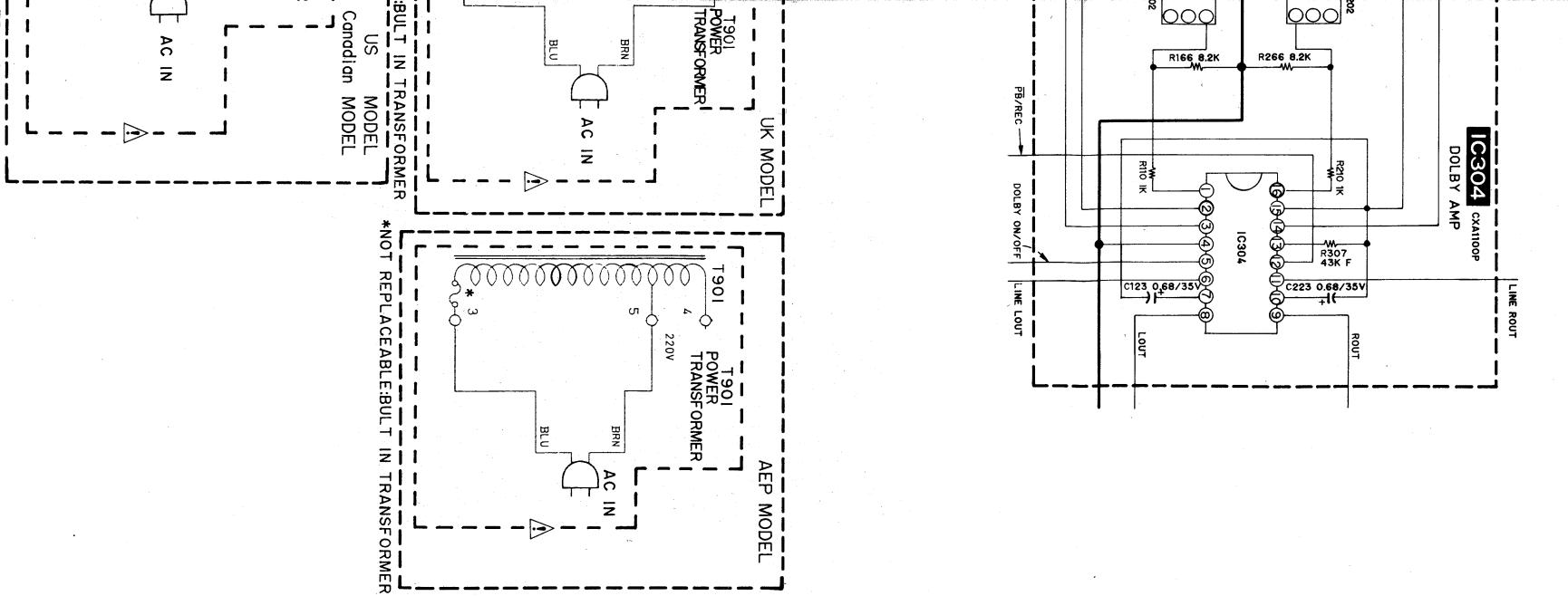
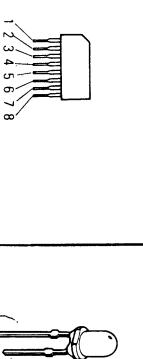
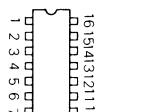




4-3. SEMICONDUCTOR LEAD LAYOUTS

**CXA1198AP
IR2E02**

**M5218L
SEL4414E
SEL4214S**



A	μPC4570C-1	2SC3399 2SC3402 2SC634SP 2SA1345	SEL1210S
B			
C			
D	M4066BP M4001BP M4011BP	2SC2785 2SA1175	US1060M 10E2N
E	CX20187	2SB1375 2SD2012	HZS6A1L
F			
G			
H			
I			
J			
K			
L			
M			
N			
O			

Note:
The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

Ref. No.	Switch	Position
S301	DOLBY NR ON/OFF	OFF
S302	DOLBY NR TYPE B/C (TC-W300)	B:TYPE
S303	DECK A TAPE SELECT	TYPE-I
S304	DECK B TAPE SELECT	TYPE-II
S501	DUBBING SPEED	NDR/NAL
S701	POWER	STANDBY
S901	DECK A MOTOR	OFF
S902	DECK A PLAY	OFF
S903	DECK B MOTOR	OFF
S904	DECK B PLAY	OFF
S905	DECK B REC	OFF

Note:
Les composants identifiés par une marque Δ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

- **B± :** B+Line
- **■ :** adjustment for repair.
- Voltage and waveforms are dc with respect to ground under no-signal conditions.
- no mark: PLAY <: DUBBING SPEED (NORMAL)
[: DUBBING SPEED (HIGH)
- ▲ : FWD ▾ : REV ● : REC
- Voltages are taken with a VOM (50 kΩ/V).
Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope.
- Voltage variations may be noted due to normal production tolerances.
- Signal path.
- ▷ : PB (DECK A)
□ : PB (DECK B)
▷▷ : REC (DECK B)

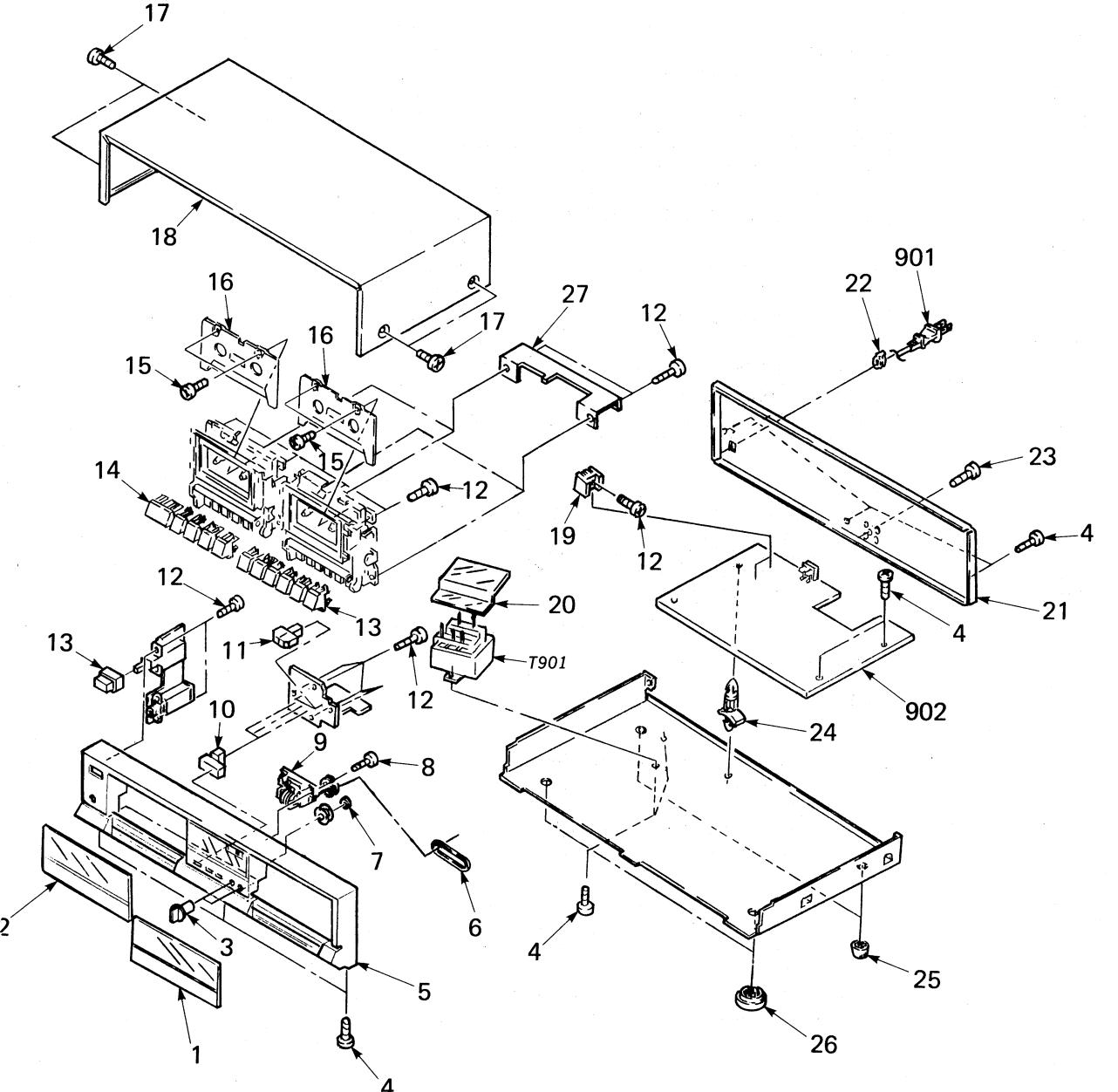
SECTION 5 EXPLODED VIEWS

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts Example:
(RED) ... KNOB, BALANCE (WHITE)
↑ ↑
Cabinet's Color Parts' Color

The components identified by mark Δ or dotted line with mark Δ are critical for safety.
Replace only with part number specified.

Les composants identifiés par une marque Δ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.



Ref.No	Part No.	Description	Remarks	Ref.No	Part No.	Description	Remarks
1	X-3340-117-1	(TC-W300 ; AEP, UK, Canadian)...LID (B) ASSY, CASSETTE		17	3-704-366-01	SCREW (CASE) (M3X8)	
1	X-3340-118-1	(TC-W300 ; US)...LID (B) ASSY, CASSETTE		18	*3-327-856-02	CASE	
1	X-3340-128-1	(TC-W190)...LID (B) ASSY, CASSETTE		19	*4-363-146-41	HEAT SINK, V.OUT	
2	X-3340-115-1	(TC-W300 ; AEP, UK, Canadian)...LID (A) ASSY, CASSETTE		20	*3-327-855-01	COVER (TRANSFORMER)	
2	X-3340-116-1	(TC-W300 ; US)...LID (A) ASSY, CASSETTE		21	*3-346-346-01	(TC-W300 ; US, Canadian)...PANEL, BACK	
2	X-3340-127-1	(TC-W190)...LID (A) ASSY, CASSETTE		21	*3-346-346-11	(TC-W300 ; UK)...PANEL, BACK	
3	3-346-380-01	KNOB (BALANCE, REC LEVEL) (BLK)		21	*3-346-346-21	(TC-W300 ; AEP1)...PANEL, BACK	
3	3-346-380-21	(TC-W300)...KNOB (BALANCE, REC LEVEL) (RED)		21	*3-346-346-31	(TC-W300 ; AEP2)...PANEL, BACK	
4	7-682-548-04	SCREW +BVTT 3X8 (S)		21	*3-346-346-51	(TC-W190)...PANEL, BACK	
5	X-3340-119-1	(TC-W300 ; AEP, UK)...PANEL ASSY, FRONT		22	*3-703-244-00	(TC-W300)...BUSHING (2104), CORD	
5	X-3340-120-1	(TC-W300 ; US, Canadian)...PANEL ASSY, FRONT		22	*3-703-571-00	(TC-W190)...BUSHING (S) (4516), CORD	
5	X-3340-129-1	(TC-W190)...PANEL ASSY, FRONT		23	7-621-849-00	SCREW, TAPPING	
6	3-305-524-00	BELT		24	*3-346-265-11	HOLDER, PC BOARD	
7	3-701-437-11	WASHER		25	X-4864-303-0	FOOT ASSY	
8	7-685-534-19	SCREW +BTP 2.6X8 TYPE2 N-S		26	X-3340-130-1	FOOT ASSY, ORNAMENTAL	
9	1-548-596-61	COUNTER, TAPE (MIDDLE TYPE)		27	*3-346-376-01	REINFORCEMENT, MD	
10	3-346-381-01	BUTTON		901	Δ .1-551-506-XX	(TC-W300 ; US, Canadian/TC-W190)...CORD, POWER	
11	3-346-379-01	KNOB (SLIDE)		901	Δ .1-555-795-00	(TC-W300 ; AEP)...CORD, POWER, EULO PLUG	
12	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S		901	Δ .1-556-035-00	(TC-W300 ; UK)...CORD, POWER	
13	3-346-385-01	BUTTON (BLOCK B)		902	*A-2056-426-A	(TC-W300)...MOUNTED PCB, AUDIO	
13	4-917-460-01	KNOB, POWER		T901	Δ .1-448-804-11	(TC-W300 ; US, Canadian/TC-W190)...TRANSFORMER, POWER	
14	3-346-384-01	BUTTON (BLOCK A)		T901	Δ .1-448-805-11	(TC-W300 ; AEP, UK)...TRANSFORMER, POWER	
15	7-685-133-19	SCREW +P 2.6X6 TYPE2 NON-SLIT					
15	4-914-974-01	PLATE, ORNAMENTAL, CASSETTE					
16							
17							
18							
19							
20							
21							
22							
23							
24							
25							
26							
27							

- NOTE:
 • Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
 • Items marked with a dotted line and a mark Δ are seldom required for routine service. Some delay should be anticipated when ordering these items.
 • If there are such as circuit parts, resistors in

Ref.No	Part No.
901	Δ .1-551-506-XX
C101	1-162-288-31
C102	1-136-157-00
C103	1-124-767-00
C106	1-162-289-31
C107	1-136-157-00
C108	1-124-767-00
C111	1-130-479-00
C112	1-162-289-31
C120	1-123-875-11
C121	1-123-875-11
C122	1-130-479-00
C123	1-136-173-00
C123	1-131-587-11
C124	1-136-167-00
C125	1-136-155-00
C126	1-136-169-00
C127	1-136-163-00
C128	1-136-161-00
C129	1-130-481-00
C130	1-136-153-00
C131	1-123-875-11
C132	1-124-925-11
C133	1-124-902-00
C134	1-123-875-11
C135	1-123-875-11
C136	1-162-284-31
C137	1-136-273-91
C138	1-136-440-11
C141	1-161-375-00
C141	1-123-875-11
C151	1-124-499-11
C152	1-124-925-11
C201	1-162-288-31
C202	1-136-157-00
C203	1-124-767-00
C206	1-162-289-31
C207	1-136-157-00
C208	1-124-767-00
C211	1-130-479-00
C212	1-162-289-31
C220	1-123-875-11
C221	1-123-875-11
C222	1-130-479-00
C223	1-136-173-00

SECTION 6 ELECTRICAL PARTS LIST

Ref.No	Part No.	Description
CNP302	*1-564-705-11	PIN, CONNECTOR
CNP303	*1-564-704-11	PIN, CONNECTOR
CNP503	*1-566-660-11	CONNECTOR, H
CNP504	*1-566-826-11	PLUG, CONNECTOR
CNP505	*1-564-505-11	PLUG, CONNECTOR
CNP803	*1-564-497-11	PIN, CONNECTOR
CT301	1-141-225-00	CAP, TUNING, T
D101	8-719-304-37	DIODE SEL4414S
D102	8-719-304-37	DIODE SEL4414S
D103	8-719-304-37	DIODE SEL4414S
D104	8-719-304-37	DIODE SEL4414S
D105	8-719-304-32	DIODE SEL4214S
D106	8-719-304-32	DIODE SEL4214S
D107	8-719-304-32	DIODE SEL4214S
D201	8-719-304-37	DIODE SEL4414E
D202	8-719-304-37	DIODE SEL4414E
D203	8-719-304-37	DIODE SEL4414E
D204	8-719-304-37	DIODE SEL4414E
D205	8-719-304-32	DIODE SEL4214S
D206	8-719-304-32	DIODE SEL4214S
D207	8-719-304-32	DIODE SEL4214S
D301	8-719-000-26	DIODE US1060M
D302	8-719-000-26	DIODE US1060M
D303	8-719-000-26	DIODE US1060M
D304	8-719-000-26	DIODE US1060M
D305	8-719-000-26	DIODE US1060M
D501	8-719-000-26	DIODE US1060M
D502	8-719-000-26	DIODE US1060M
D503	8-719-000-26	DIODE US1060M
D504	8-719-000-26	DIODE US1060M
D505	8-719-000-26	DIODE US1060M
D506	8-719-000-26	DIODE US1060M
D507	8-719-000-26	DIODE US1060M
D511	8-719-302-45	DIODE SEL1210S
D512	8-719-302-45	(TC-W300)....D
D513	8-719-302-45	DIODE SEL1210S
D701	8-719-200-77	DIODE 10E2N
D702	8-719-200-77	DIODE 10E2N
D703	8-719-200-77	DIODE 10E2N
D704	8-719-200-77	DIODE 10E2N
D705	8-719-933-33	DIODE HZS6A1L
IC101	8-759-912-79	IC IR2E02
IC201	8-759-912-79	IC IR2E02
IC301	8-759-111-44	IC UPC4570C-1
IC302	8-759-111-44	IC UPC4570C-1
IC303	8-759-601-43	IC M4066BP
IC304	8-752-018-70	(TC-W300)....IC
IC304	8-752-031-67	(TC-W190)....IC
IC305	8-752-033-61	IC CXA1198AP
IC306	8-759-600-02	IC M5218L
IC307	8-759-601-02	(TC-W190)....IC
IC501	8-759-601-06	IC M4001BP
IC502	8-759-601-10	IC M4011BP
J301	1-565-258-11	JACK, PIN 4P (L)
J302	1-507-982-11	JACK (LARGE T)
L101	1-410-780-11	INDUCTOR
L201	1-410-780-11	INDUCTOR
LFP101	1-236-087-11	FILTER, LOW PA
LFP201	1-236-087-11	FILTER, LOW PA
Q101	8-729-806-38	TRANSISTOR 2S1
Q102	8-729-178-54	TRANSISTOR 2S1

SECTION 6 ELECTRICAL PARTS LIST

the parts
specified in
the set.
ence they
. Some
ing these

in a set
typical
itors and
omitted.

CAPACITORS:
MF: μ F, PF: $\mu\mu$ F.

RESISTORS
• All resistors are in ohms.
• F: nonflammable

COILS
• MMH: mH, UH: μ H

SEMICONDUCTORS
In each case, U: μ , for example:
UA...: μ A..., UPA...: μ PA...,
UPC...: μ PC, UPD...: μ PD...

The components identified by mark Δ or dotted line with mark Δ are critical for safety. Replace only with part number specified.

Les composants identifiés par une marque Δ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.
--

		Ref.No	Part No.	Description
190)		C223	1-131-587-11	(TC-W190) ....TANTALUM 0.68MF 10% 35V
WER, EULO PLUG	ER	C224	1-136-167-00	(TC-W300)....FILM 0.15MF 5% 50V
AUDIO	AUDIO	C225	1-136-155-00	(TC-W300)....FILM 0.015MF 5% 50V
10% 50V	5% 50V	C226	1-136-169-00	(TC-W300)....FILM 0.22MF 5% 50V
20% 50V	10% 50V	C227	1-136-163-00	(TC-W300)....FILM 0.068MF 5% 50V
5% 50V		C228	1-136-161-00	(TC-W300)....FILM 0.047MF 5% 50V
20% 50V		C229	1-130-481-00	(TC-W300)....MYLAR 0.0068MF 5% 50V
5% 50V		C230	1-136-153-00	(TC-W300)....FILM 0.01MF 5% 50V
10% 50V		C231	1-123-875-11	ELECT 10MF 20% 50V
20% 50V		C232	1-124-925-11	ELECT 2.2MF 20% 50V
10% 50V		C233	1-124-902-00	ELECT 0.47MF 20% 50V
5% 50V		C234	1-123-875-11	ELECT 10MF 20% 50V
20% 50V		C235	1-123-875-11	ELECT 10MF 20% 50V
5% 50V		C236	1-162-284-31	CERAMIC 150PF 10% 50V
10% 50V		C237	1-136-273-91	FILM 75PF 5% 630V
20% 50V		C238	1-136-440-11	FILM 39PF 5% 630V
5% 50V		C241	1-161-375-00	(TC-W300)....CERAMIC 0.0022MF 20% 16V
5% 50V		C251	1-124-499-11	ELECT 1MF 20% 50V
10% 35V		C252	1-124-925-11	ELECT 2.2MF 20% 50V
5% 50V		C252	1-123-875-11	(TC-W190)....ELECT 10MF 20% 50V
5% 50V		C301	1-124-443-00	ELECT 100MF 20% 10V
5% 50V		C302	1-124-443-00	ELECT 100MF 20% 10V
5% 50V		C303	1-124-443-00	ELECT 100MF 20% 10V
5% 50V		C304	1-124-443-00	ELECT 100MF 20% 10V
5% 50V		C311	1-126-176-11	ELECT 220MF 20% 10V
5% 50V		C312	1-126-176-11	ELECT 220MF 20% 10V
5% 50V		C316	1-123-875-11	ELECT 10MF 20% 50V
20% 50V		C321	1-124-902-00	ELECT 0.47MF 20% 50V
20% 50V		C322	1-124-925-11	ELECT 2.2MF 20% 50V
20% 50V		C323	1-130-478-00	MYLAR 0.0039MF 5% 50V
20% 50V		C324	1-130-478-00	MYLAR 0.0039MF 5% 50V
20% 50V		C325	1-130-482-00	MYLAR 0.0082MF 5% 50V
10% 50V		C326	1-136-562-11	FILM 0.0082MF 5% 630V
5% 630V		C327	1-124-925-11	ELECT 2.2MF 20% 50V
5% 630V		C501	1-123-875-11	ELECT 10MF 20% 50V
20% 16V		C502	1-123-875-11	ELECT 10MF 20% 50V
20% 50V		C503	1-124-499-11	ELECT 1MF 20% 50V
20% 50V		C701	1-124-360-00	ELECT 1000MF 20% 16V
20% 50V		C702	1-124-360-00	ELECT 1000MF 20% 16V
10% 50V		C703	1-126-105-11	ELECT 1000MF 20% 35V
5% 50V		C704	1-124-120-11	ELECT 220MF 20% 16V
20% 50V		C705	1-124-120-11	ELECT 220MF 20% 16V
10% 50V		C706	1-123-875-11	ELECT 10MF 20% 50V
5% 50V		C707	1-124-443-00	ELECT 100MF 20% 10V
20% 50V		C708	1-124-443-00	ELECT 100MF 20% 10V
5% 50V		C709	1-162-288-31	CERAMIC 330PF 10% 50V
10% 50V		C710	1-162-288-31	CERAMIC 330PF 10% 50V
20% 50V		CN503	*1-566-659-11	CONNECTOR, HINGE (SOCKET) 18P
5% 50V		CN504	*1-566-827-11	SOCKET, CONNECTOR 12P
5% 50V		CNP301	*1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P

Ref.No	Part No.	Description	Ref.No	Part No.	Description
CNP302	*1-564-705-11	PIN, CONNECTOR (SMALL TYPE) 3P	Q201	8-729-806-38	TRANSISTOR 2SC3399
CNP303	*1-564-704-11	PIN, CONNECTOR (SMALL TYPE) 2P	Q202	8-729-178-54	TRANSISTOR 2SC2785
CNP503	*1-566-660-11	CONNECTOR, HINGE (PLUG) 18P	Q203	8-729-178-54	TRANSISTOR 2SC2785
CNP504	*1-566-826-11	PLUG, CONNECTOR 12P	Q301	8-729-806-38	TRANSISTOR 2SC3399
CNP505	*1-564-505-11	PLUG, CONNECTOR 2P	Q302	8-729-806-38	TRANSISTOR 2SC3399
CNP803	*1-564-497-11	PIN, CONNECTOR 4P	Q303	8-729-806-38	TRANSISTOR 2SC3399
CT301	1-141-225-00	CAP, TUNING, TRIMAR	Q304	8-729-806-20	TRANSISTOR 2SA1345
D101	8-719-304-37	DIODE SEL4414E	Q305	8-729-600-27	TRANSISTOR 2SC634SP
D102	8-719-304-37	DIODE SEL4414E	Q306	8-729-600-27	TRANSISTOR 2SC634SP
D103	8-719-304-37	DIODE SEL4414E	Q307	8-729-600-27	TRANSISTOR 2SC634SP
D104	8-719-304-37	DIODE SEL4414E	Q308	8-729-806-28	TRANSISTOR 2SC3402
D105	8-719-304-32	DIODE SEL4214S	Q501	8-729-806-38	TRANSISTOR 2SC3399
D106	8-719-304-32	DIODE SEL4214S	Q502	8-729-806-20	TRANSISTOR 2SA1345
D107	8-719-304-32	DIODE SEL4214S	Q503	8-729-806-38	TRANSISTOR 2SC3399
D201	8-719-304-37	DIODE SEL4414E	Q504	8-729-806-38	TRANSISTOR 2SC3399
D202	8-719-304-37	DIODE SEL4414E	Q505	8-729-806-20	TRANSISTOR 2SA1345
D203	8-719-304-37	DIODE SEL4414E	Q506	8-729-806-20	TRANSISTOR 2SA1345
D204	8-719-304-37	DIODE SEL4414E	Q507	8-729-178-54	TRANSISTOR 2SC2785
D205	8-719-304-32	DIODE SEL4214S	Q701	8-729-178-54	TRANSISTOR 2SC2785
D206	8-719-304-32	DIODE SEL4214S	Q702	8-729-178-54	TRANSISTOR 2SC2785
D207	8-719-304-32	DIODE SEL4214S	Q703	8-729-209-60	TRANSISTOR 2SB1375
D301	8-719-000-26	DIODE US1060M	Q704	8-729-117-54	TRANSISTOR 2SA1175
D302	8-719-000-26	DIODE US1060M	Q705	8-729-117-54	TRANSISTOR 2SA1175
D303	8-719-000-26	DIODE US1060M	Q706	8-729-209-15	TRANSISTOR 2SD2012
D304	8-719-000-26	DIODE US1060M			RESISTOR
D305	8-719-000-26	DIODE US1060M	R101	1-247-889-00	CARBON
D501	8-719-000-26	DIODE US1060M	R102	1-249-404-00	(TC-W300) ...CARBON
D502	8-719-000-26	DIODE US1060M	R102	1-249-403-11	(TC-W190) ...CARBON
D503	8-719-000-26	DIODE US1060M	R103	1-249-426-11	CARBON
D504	8-719-000-26	DIODE US1060M	R104	1-247-881-00	CARBON
D505	8-719-000-26	DIODE US1060M	R106	1-247-889-00	CARBON
D506	8-719-000-26	DIODE US1060M	R107	1-249-404-00	(TC-W300) ...CARBON
D507	8-719-000-26	DIODE US1060M	R107	1-249-403-00	(TC-W190) ...CARBON
D511	8-719-302-45	DIODE SEL1210S	R108	1-249-426-11	CARBON
D512	8-719-302-45	(TC-W300)....DIODE SEL1210S	R109	1-247-881-00	CARBON
D513	8-719-302-45	DIODE SEL1210S	R110	1-249-417-11	CARBON
D701	8-719-200-77	DIODE 10E2N	R111	1-247-856-00	(TC-W300) ...CARBON
D702	8-719-200-77	DIODE 10E2N	R111	1-249-430-11	(TC-W190) ...CARBON
D703	8-719-200-77	DIODE 10E2N	R112	1-249-431-11	CARBON
D704	8-719-200-77	DIODE 10E2N	R113	1-247-887-00	CARBON
D705	8-719-933-33	DIODE HZS6A1L	R120	1-249-433-11	C

Ref.No	Part No.	Description					Ref.No	Part No.	Description						
R145	1-249-433-11	CARBON	22K	5%	1/4W		R251	1-249-429-11	CARBON	10K	5%	1/4W			
R146	1-249-431-11	CARBON	15K	5%	1/4W		R252	1-249-421-11	(TC-W190)	2.2K	5%	1/4W			
R147	1-249-409-11	CARBON	220	5%	1/4W		R252	1-249-423-11	(TC-W300)	3.3K	5%	1/4W			
R151	1-249-429-11	CARBON	10K	5%	1/4W		R253	1-249-425-11	CARBON	4.7K	5%	1/4W			
R152	1-249-423-11	(TC-W300)					R254	1-249-425-11	CARBON	4.7K	5%	1/4W			
	....CARBON	3.3K	5%	1/4W		R255	1-249-441-11	CARBON	100K	5%	1/4W			
R152	1-249-421-11	(TC-W190)					R256	1-249-441-11	CARBON	100K	5%	1/4W			
	....CARBON	2.2K	5%	1/4W		R257	1-249-433-11	CARBON	22K	5%	1/4W			
R153	1-249-425-11	CARBON	4.7K	5%	1/4W		R261	1-249-441-11	(TC-W190)						
R154	1-249-425-11	CARBON	4.7K	5%	1/4W			....CARBON	100K	5%	1/4W			
R155	1-249-441-11	CARBON	100K	5%	1/4W		R262	1-249-417-11	(TC-W190)						
R156	1-249-441-11	CARBON	100K	5%	1/4W			....CARBON	1K	5%	1/4W			
R157	1-249-433-11	CARBON	22K	5%	1/4W		R263	1-249-429-11	(TC-W190)						
R161	1-249-441-11	(TC-W190)						....CARBON	10K	5%	1/4W			
	....CARBON	100K	5%	1/4W		R264	1-249-425-11	(TC-W190)						
R162	1-249-417-11	(TC-W190)						....CARBON	4.7K	5%	1/4W			
	....CARBON	1K	5%	1/4W		R265	1-249-423-11	(TC-W190)						
R163	1-249-429-11	(TC-W190)						....CARBON	3.3K	5%	1/4W			
	....CARBON	10K	5%	1/4W		R266	1-249-428-11	(TC-W190)						
R164	1-249-425-11	(TC-W190)						....CARBON	8.2K	5%	1/4W			
	....CARBON	4.7K	5%	1/4W		R301	1-249-409-11	CARBON	220	5%	1/4W			
R165	1-249-231-11	(TC-W190)						CARBON	220	5%	1/4W				
	....CARBON	3.3K	5%	1/4W		R302	1-249-409-11	CARBON	220	5%	1/4W			
R166	1-249-428-11	(TC-W190)						CARBON	220	5%	1/4W				
	....CARBON	8.2K	5%	1/4W		R303	1-249-409-11	CARBON	220	5%	1/4W			
R201	1-247-889-00	CARBON	270K	5%	1/4W			CARBON	220	5%	1/4W				
R202	1-249-404-00	(TC-W300)					R305	1-247-733-11	(TC-W300)						
	....CARBON	82	5%	1/4W			....CARBON	33	5%	1/2W			
R202	1-249-403-11	(TC-W190)					R305	1-247-739-11	(TC-W190)						
	....CARBON	68	5%	1/4W			....CARBON	100	5%	1/2W			
R203	1-249-426-11	CARBON	5.6K	5%	1/4W		R306	1-247-733-11	(TC-W300)						
R204	1-247-881-00	CARBON	120K	5%	1/4W			....CARBON	33	5%	1/2W			
R206	1-247-889-00	CARBON	270K	5%	1/4W		R306	1-247-739-11	(TC-W190)						
R207	1-249-404-00	(TC-W300)						....CARBON	100	5%	1/2W			
R207	1-249-403-11	(TC-W190)					R307	1-215-460-00	(TC-W190)						
	....CARBON	68	5%	1/4W			....METAL	43K	5%	1/6W			
R208	1-249-426-11	CARBON	5.6K	5%	1/4W			R307	1-215-469-00	(TC-W300)					
R209	1-247-881-00	CARBON	120K	5%	1/4W			....METAL	100K	1%	1/6W			
R210	1-249-417-11	CARBON	1K	5%	1/4W		R310	1-247-864-11	CARBON	24K	5%	1/4W			
R211	1-247-856-00	(TC-W300)					R311	1-249-439-11	CARBON	68K	5%	1/4W			
R211	1-249-430-11	(TC-W190)					R312	1-249-439-11	CARBON	68K	5%	1/4W			
CARBON	11K	5%	1/4W			R313	1-247-883-00	CARBON	150K	5%	1/4W			
R212	1-249-431-11	CARBON	15K	5%	1/4W			R314	1-249-441-11	CARBON	100K	5%	1/4W		
R213	1-247-887-00	CARBON	220K	5%	1/4W			R315	1-249-436-11	CARBON	39K	5%	1/4W		
R220	1-249-433-11	CARBON	22K	5%	1/4W			R316	1-247-872-11	CARBON	51K	5%	1/4W		
R221	1-249-423-11	(TC-W300)						R317	1-247-887-00	CARBON	220K	5%	1/4W		
R222	1-249-428-11	(TC-W300)						R318	1-249-440-11	CARBON	82K	5%	1/4W		
CARBON	3.3K	5%	1/4W				R319	1-249-441-11	CARBON	100K	5%	1/4W		
R223	1-247-840-00	(TC-W300)						R320	1-249-440-11	CARBON	82K	5%	1/4W		
CARBON	8.2K	5%	1/4W				R321	1-247-872-11	CARBON	51K	5%	1/4W		
R224	1-249-425-11	(TC-W300)						R322	1-249-439-11	CARBON	68K	5%	1/4W		
CARBON	2.4K	5%	1/4W				R323	1-247-887-00	CARBON	220K	5%	1/4W		
R225	1-247-822-11	(TC-W300)						R324	1-247-883-00	CARBON	150K	5%	1/4W		
R226	1-249-427-11	(TC-W300)							R325	1-249-438-11	CARBON	56K	5%	1/4W	
CARBON	6.8K	5%	1/4W				R326	1-249-436-11	CARBON	39K	5%	1/4W		
R227	1-249-415-11	(TC-W300)							R327	1-247-874-11	CARBON	62K	5%	1/4W	
CARBON	680	5%	1/4W					R328	1-247-876-11	CARBON	75K	5%	1/4W	
R228	1-249-421-11	CARBON	2.2K	5%	1/4W					R329	1-247-881-00	CARBON	120K	5%	1/4W
R229	1-249-425-11	CARBON	4.7K	5%	1/4W					R330	1-249-439-11	CARBON	68K	5%	1/4W
R230	1-249-417-11	CARBON	1K	5%	1/4W					R331	1-249-437-11	CARBON	47K	5%	1/4W
R231	1-249-429-11	CARBON	10K	5%	1/4W					R332	1-249-434-11	CARBON	27K	5%	1/4W
R232	1-249-427-11	CARBON	6.8K	5%	1/4W					R333	1-249-436-11	CARBON	39K	5%	1/4W
R233	1-249-422-11	CARBON	2.7K	5%	1/4W					R334	1-249-434-11	CARBON	27K	5%	1/4W
R234	1-249-425-11	CARBON	4.7K	5%	1/4W					R335	1-249-441-11	CARBON	100K	5%	1/4W
R235	1-249-437-11	CARBON	47K	5%	1/4W					R336	1-249-441-11	CARBON	100K	5%	1/4W
R236	1-249-430-11	CARBON	12K	5%	1/4W					R337	1-249-435-11	CARBON	33K	5%	1/4W
R244	1-249-429-11	CARBON	10K	5%	1/4W					R338	1-249-434-11	CARBON	27K	5%	1/4W
R245	1-249-433-11	CARBON	22K	5%	1/4W					R339	1-249-438-11	CARBON	56K	5%	1/4W
R246	1-249-431-11	CARBON	15K	5%	1/4W					R340	1-249-437-11	CARBON	47K	5%	1/4W
R247	1-249-409-11	CARBON	220	5%	1/4W					R341	1-249-441-11	CARBON	100K	5%	1/4W

Ref.No	Part No.	Description			
R342	1-247-881-00	CARBON	120K	5%	1/4W
R343	1-249-434-11	CARBON	27K	5%	1/4W
R344	1-249-433-11	CARBON	22K	5%	1/4W
R345	1-249-439-11	CARBON	68K	5%	1/4W
R346	1-247-872-11	CARBON	51K	5%	1/4W
R347	1-249-437-11	CARBON	47K	5%	1/4W
R348	1-249-441-11	CARBON	100K	5%	1/4W
R349	1-249-441-11	CARBON	100K	5%	1/4W
R351	1-249-429-11	CARBON	10K	5%	1/4W
R352	1-249-417-11	CARBON	1K	5%	1/4W
R353	1-249-433-11	CARBON	22K	5%	1/4W
R354	1-249-433-11	CARBON	22K	5%	1/4W
R355	1-249-393-11	CARBON	10	5%	1/4W
R356	1-249-425-11	CARBON	4.7K	5%	1/4W
R357	1-249-429-11	CARBON	10K	5%	1/4W
R358	1-249-424-11	CARBON	3.9K	5%	1/4W
R359	1-249-413-11	CARBON	470	5%	1/4W
R361	1-249-404-00	CARBON	82	5%	1/4W
R362	1-249-433-11	CARBON	22K	5%	1/4W
R363	1-249-433-11 (TC-W300) ....CARBON		22K	5%	1/4W
R364	1-249-437-11	CARBON	47K	5%	1/4W
R365	1-249-437-11....CARBON		47K	5%	1/4W
R501	1-249-433-11	CARBON	22K	5%	1/4W
R502	1-249-433-11	CARBON	22K	5%	1/4W
R503	1-249-437-11	CARBON	47K	5%	1/4W
R504	1-249-437-11	CARBON	47K	5%	1/4W
R505	1-249-429-11	CARBON	10K	5%	1/4W
R506	1-249-435-11	CARBON	33K	5%	1/4W
R507	1-249-431-11	CARBON	15K	5%	1/4W
R508	1-249-437-11	CARBON	47K	5%	1/4W
R511	1-249-409-11	CARBON	220	5%	1/4W
R512	1-249-433-11	CARBON	22K	5%	1/4W
R513	1-249-433-11	CARBON	22K	5%	1/4W
R515	1-249-433-11	CARBON	22K	5%	1/4W
R521	1-249-421-11	CARBON	2.2K	5%	1/4W
R522	1-249-407-11	CARBON	150	5%	1/4W
R523	1-249-421-11	CARBON	2.2K	5%	1/4W
R524	1-249-407-11	CARBON	150	5%	1/4W
R531	1-249-413-11	CARBON	470	5%	1/4W
R532	1-249-413-11	CARBON	470	5%	1/4W
R533	1-249-413-11	CARBON	470	5%	1/4W
R701	1-249-421-11	CARBON	2.2K	5%	1/4W
R702	1-249-421-11	CARBON	2.2K	5%	1/4W
R703	1-249-421-11	CARBON	2.2K	5%	1/4W
R704	1-249-421-11	CARBON	2.2K	5%	1/4W
R705	1-249-421-11	CARBON	2.2K	5%	1/4W
R706	1-249-409-11	CARBON	220	5%	1/4W
R707	1-249-423-11	CARBON	3.3K	5%	1/4W
R708	1-249-423-11	CARBON	3.3K	5%	1/4W
R709	1-249-424-11	CARBON	3.9K	5%	1/4W
RV101	1-228-994-00	RES, ADJ, CARBON	10K		
RV102	1-228-994-00	RES, ADJ, CARBON	10K		
RV103	1-228-994-00	RES, ADJ, CARBON	10K		
RV201	1-228-994-00	RES, ADJ, CARBON	10K		
RV202	1-228-994-00	RES, ADJ, CARBON	10K		
RV203	1-228-994-00	RES, ADJ, CARBON	10K		
RV301	1-238-261-11	RES, VAR, CARBON	50K/50K (BALANCE)		
RV302	1-238-260-11	RES, VAR, CARBON	20K/20K (REC LEVEL)		
RV501	1-228-990-00	RES, ADJ, CARBON	1K		
RV502	1-228-990-00	RES, ADJ, CARBON	1K		
RV503	1-228-990-00	RES, ADJ, CARBON	1K		
RV504	1-228-990-00	RES, ADJ, CARBON	1K		
RY301	1-515-614-11	RELAY			

Ref.No	Part No.	Description
S301	1-571-510-11	SWITCH, PUSH (1 KEY) (DOLBY NR ON/OFF)
S302	1-571-510-11	(TC-W300)...SWITCH, PUSH (1 KEY) DOLBY NR TYPE B/C)
S303	1-571-627-11	SWITCH, SLIDE (DECK A TAPE SELECT)
S304	1-571-628-11	SWITCH, SLIDE (DECK B TAPE SELECT)
S501	1-571-510-11	SWITCH, PUSH (1 KEY) (DUBBING SPEED)
S701	1-570-393-11	SWITCH, PUSH (1 KEY) (POWER)
SPK101	1-235-186-00	ENCAPSULATED COMPONENT
SPK201	1-235-186-00	ENCAPSULATED COMPONENT
T301	1-433-303-11	TRANSFORMER, BIAS OSCILLATION
T901	△.1-448-804-11	(TC-W300 ; US, Canadian/TC-W190) ....TRANSFORMER, POWER
T901	△.1-448-805-11	(TC-W300 ; AEP, UK)...TRANSFORMER, POWER

ACCESSORY & PACKING MATERIAL

Part No.	Description	Remark
1-559-533-11	CORD, CONNECTION	
* 3-346-344-01	CUSHION	
* 3-346-378-21	(TC-W300)...INDIVIDUAL CARTON	
* 3-346-378-31	(TC-W190)...INDIVIDUAL CARTON	
3-703-450-01	(TC-W300 ; US/TC-W190)...INSTRUCTION	
* 3-704-343-01	SHEET (STANDARD), PROTECTION	
3-786-251-11	(TC-W300 ; AEP, Canadian)...MANUAL, INSTRUCTION	
3-786-251-21	(TC-W300 ; US, UK)...MANUAL, INSTRUCTION	
3-786-251-41	(TC-W300 ; AEP)...MANUAL, INSTRUCTION	
3-786-251-51	(TC-W190)...MANUAL, INSTRUCTION	

Note:
The components identified by mark ▲ or dotted line with mark ▲ are critical for safety.
Replace only with part number specified.

Note:
Les composants identifiés par une marque ▲ sont critiques pour la sécurité.
Ne les remplacer que par une pièce portant le numéro spécifié.

English
88F0484-1

Printed in Japan
© 1988.6

Published by A/V Engineering Service Dept.